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Traditional problem-solving models are lock step, linearly focused, and end-state driven. However, the advent of the Global War on Terror has changed the American way of warfare; no longer are we designing campaigns against structured state-aligned enemies whose doctrine is known and whose actions and motivations are conventional. Proponents of emerging models argue that commonly used, reductionist problem solving methods are not suited for campaign planning because they assume a closed system and do not easily allow for the extremely rapid changes that are so common in the relationships found in the COE. Framing and campaign design, with emphasis on systems theory, have therefore made their way to the forefront of doctrinal problem solving thinking. One model, Systemic Operational Design (SOD), looks at campaign design at the operational level of war. This paper gives a short explanation of the systems theory behind SOD, examines how the SOD process happens, and compares SOD with the time proven "Commander's Estimate Process" that makes up the JOPP, MDMP, and other service and joint problem solving methods.

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SYSTEMIC OPERATIONAL DESIGN:
An Alternative to Estimate Planning

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Contents

Abstract

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INTRODUCTION

Today's operating environment has become complex. The advent of the Global War on Terror has changed the American way of warfare; no longer are we designing campaigns against structured state-aligned enemies whose doctrine is known and whose actions and motivations are conventional. The United States is finding itself globally engaged against not only foreign states, but also the networks of non-state actors whose command and military structures are not readily discernable.[1] Today's enemy has adopted nontraditional tactics, a worldwide focus, and can be found virtually anywhere. This radically changed wartime environment calls for a new way of being described and countered, a broader picture that transcends the traditional picture of the military battlefield and adopts a multi-dimensional, interconnected view.[2]

The challenge lies in framing the problem and what has become known as the process of campaign design. Due to the complexity of the contemporary operating environment (COE), several existing and emerging doctrine publications have shifted away from structured planning models featuring checklists and templates.[3] Traditional problem-solving models are lock step, linearly focused, and end-state driven. Proponents of emerging models argue that they are not suited for campaign planning because they assume a closed system and do not easily allow for the extremely rapid changes that are so common in the relationships found in the COE. Framing and campaign design, with emphasis on systems theory, has therefore made its way to the forefront of doctrinal problem solving thinking.

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[1] Gary Luck and Mike Findlay, *Joint Operations Insights and Best Practices, 2nd ed.* (Joint Warfighting Center: United States Joint Forces Command, July 2008), 1.
[2] Ibid., 10
[3] Booz Allen Hamilton, *Art of Design, Student Text, Version 1.0,*(Fort Monroe, VA: U.S. Army Training and Doctrine Command, 24 September 2008), 3.

The now defunct Effects Based Operations (EBO) was the first attempt at looking at complex problems in a non-traditional way. Though now viewed as deeply flawed as an attempt to "take the art out of warfare and substitute it with science,"[4] EBO's component processes were consistent with current planning processes but added the enhancements that reflect the changes in the way commanders think about and conduct joint operations.[5] Recently, a new design model has surfaced that addresses the flaws found in EBO and looks at the COE as a system. This design model is called Systemic Operational Design (SOD).

Systemic Operational Design represents the current stage of emerging thought in military-systems theory.[6] SOD intends to account for uncertainty as an attribute of complex systems and improves on EBO's approach of disrupting nodes to achieve results by disrupting relationships *between* nodes and constantly reframing the system.[7] SOD is a cyclic learning process that enables designers to assess a problem holistically and develop courses of action in real time based on systemic changes. It is important to note that SOD is not intended to be a replacement for the planning process. It utilizes systemic design to inform the base construct of the plan.[8] SOD informs planners of what to plan, not how to plan.

This paper will examine SOD and the theory on which it is based. Arguments both for and against its implementation will be examined, as well. The thesis of this paper is: Systemic Operational Design and Military Decision Making Process are inherently different processes that cannot be merely spliced together to form a more efficient joint operational

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[4] Milan N. Vego, "Effects Based Operations: A Critique," *Joint Force Quarterly*, no. 41 (2nd Quarter 2006): 54.
[5] Ketti C. Davidson, "Systemic Operational Design (SOD): Gaining and Maintaining the Cognitive Initiative" (Monograph, Ft. Leavenworth, KS: US Army Command and General Staff College, School of Advanced Military Studies Department, 2006), 18, http://www.dtic.mil/ (accessed 01 April 2009), Available as Defense Technical Information Center Report (DTIC) ADA458361.
[6] Ibid., 31
[7] Ibid., 31, A node in any system is a tangible linkage that can be identified and targeted.
[8] Ibid., 32

planning model. However, SOD is an effective method of framing and defining operational level problems when used at the Joint Task Force Level or higher in a COE setting for campaign design.

SYSTEMIC ANALYSIS

To be able to understand how SOD works, it is essential that practitioners have a working knowledge of complexity, chaos, and systems theories. It is also important to be familiar with the difference between systemic and systematic analysis. This section will provide some background knowledge in these topics. The three types of operational problems, well structured, medium structured, and ill structured, will also be discussed.

Systems can be either complicated or complex.[9] Systematic planning processes such as the Commander's Estimate treat problems as *complicated* systems.[10] When a system is complicated, its behavior is predictable. Any input to the system will produce a proportional and repeatable output. The different parts of complicated systems work together in predictable ways and because of their closed nature such systems can be reduced to their parts and analyzed. Such problems are "well structured", have only one or two possible solutions, and are analyzed systematically. Solutions can be found using an analytical problem solving method.[11]

Systems gain complexity when the interactivity of their parts changes how the system functions. Interactive complexity yields an unpredictable and non-linear system that does not

[9] Hamilton, *Art of Design*, 7.
[10] The term "Commander's Estimate" will be used for the purposes of this paper to describe any systematic problem solving process currently in use by the military- i.e. Analysis of problem, course of action development, wargaming, course of action decision, and orders production. The MDMP, JOPP, and MCDP are all examples.
[11] U.S. Army, *Commander's Appreciation and Campaign Design,* TRADOC Pamphlet 525-5-500. (FT. Monroe, VA: US Army Training and Doctrine Command, 28 January 2008), 8.

show the proportional and summative response a complicated system does.[12] In chaos theory, this ambiguous and irregular link is called "the butterfly effect".[13] Found when scientists were experimenting with weather control, it is the principle that an input at one point on a system may have extreme implications at another point or no implications at all. Any system involving a human element should be viewed as complex, as the behavior of humans and their cultures is rarely predictable. The art of warfare is the clash of human society and culture, and therefore most problems on the operational level are structurally and interactively complex.[14] Moderately complex systems with limited interactivity yield "medium structured" problems, those with no single correct solution. An example of a medium structured problem is a sector defense; there is no single solution but the structure of the problem is generally agreed upon by doctrine.[15] The problem is on the cusp of structural complexity, but is well into the realm of interactive complexity when looking at the human dynamic of the attacking and defending commanders. A medium structured problem is better dealt with systemically, but linear and reductive methods like the commander's estimate can also be effective.

The most complex system is the *complex adaptive system.* These systems are not only structurally and interactively complex, but they are capable of learning and adapting to input. Problems like this are called *ill-structured*; they are the most challenging and chaotic. The lack of structure in such a problem causes disagreement on defining the problem, how to solve it, or what the end-state in solving it might be.[16] Clear connections to the current fight

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[12] Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (Portland, OR: Frank Cass, 1997), 7.
[13] James Gleick, *Chaos: Making a New Science* (New York, NY: Penguin Group, 2008),
[14] U.S. Army, *Commander's Appreciation and Campaign Design,* TRADOC Pamphlet 525-5-500. (FT. Monroe, VA: US Army Training and Doctrine Command, 28 January 2008), 7.
[15] Ibid., 8
[16] Hamilton, *Art of Design*, 9.

in Iraq and Afghanistan can be made here, as counter-insurgency is an example of a complex adaptive system. Ill-structured problems have certain characteristics; they are all unique, they have no fixed set of potential solutions and solutions are on a scale of better to worse, possible solutions are given one opportunity to succeed because the attempt will change the entire system, each problem is the symptom of another problem, and there is no clear end-state.[17]

THE PROBLEM

Though the military acknowledges in its doctrine that a range of complexity and structure exists and that our forces are dealing with complex adaptive problems on a daily basis, our design models at the operational level are not being improved to cope. Sorrels et al, in their comprehensive paper on Operational Design, say this very clearly, "Current US military doctrine concentrates on attacking things as opposed to systems. Campaign plans are poor attempts at trying to break down a system into its constituent parts and then deal with them individually. In short, despite acknowledging that systems exist, current campaign planning is reductionism at its best."[18] Joint Publication 3-0 identifies the systems perspective as fundamental to operational design,[19] but even as it does the manual still emphasizes reductionist and linear constructs such as the center of gravity and end-state. The commander's estimate process, the prevalent planning and design model at every level, may not adequately take into account the non-linearity of the modern environment.

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[17] U.S. Army, *Commander's Appreciation and Campaign Design,* TRADOC Pamphlet 525-5-500. (FT. Monroe, VA: US Army Training and Doctrine Command, 28 January 2008), 9-11.

[18] William T. Sorrels, et al, "Systemic Operational Design: An Introduction" Monograph (School of Advanced Military Studies AY 04/05), 59, http://cgsc.cdmhost.com/cgi-bin/showfile.exe?CISOROOT=/p4013coll3&CISOPTR=1869&filename=1870.pdf (accessed 01 April 2009).

[19] Chairman, U.S. Joint Chiefs of Staff. *Joint Operations,* Joint Publication (JP) 3-0. (Washington DC: CJCS, 13 February 2008), IV-4.

The commander's estimate design process was adequate for the old "cold war" scenario where friendly and enemy units conduct battle with military equipment according to their respective doctrine. This type of problem can be classified as a moderately complex system with a definite human element, but can be satisfactorily reduced to component elements and methodically accounted for. For example, during the cold war, an armored division was a familiar sized unit, the removal or addition of which was something that could have predictable effects on a situation. Complexity was certainly prevalent in this type of warfare, but commanders ultimately knew that they would be fighting a uniformed state-aligned enemy that had similar capabilities. The characteristics of the wartime environment over the last 20 to 30 years have significantly changed. As Canadian LCol L. Craig Dalton puts it in his monograph, "Some of these characteristics include globalization, the information revolution, culture, religion, demographics, economics, non-state actors, transnational terrorist groups, and international criminal syndicates".[20] The premise of our current operational design model is state on state, large scale, mechanized warfare.[21] The difference is clear to contemporary operational commanders, and many have realized that in the aftermath of our perceived failure to quickly recognize the insurgency in Iraq.[22]

Effects based operations was a valid attempt at looking at problems from a true systems perspective. Using Systems of Systems Analysis (SoSA), EBO acknowledged that affecting the interactivity of systems within a construct could change the output of a system. However, the planning model did not take into account that complex adaptive systems by

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[20] L. Craig Dalton, "Systemic Operational Design: Epistemological Bumpf or the Way Ahead for Operational Design?" (Monograph, Fort Leavenworth, KS: United States Army Command and General Staff College, School of Advanced Military Studies Department, 2006), 24, http://www.dtic.mil/ (accessed 01 April 2009), Available as Defense Technical Information Center Report (DTIC) ADA451283.

[21] Ibid., 24

[22] Alex Vohr, "Commander's Appreciation and Campaign Design, A critique of TraDoc Pamphlet 525-5-500," *Marine Corps Gazette*, March 2009, 17.

definition cannot have predictable effects from a given input. EBO's entire premise was that the effects of one's actions on a system's nodes would be linear and thus predictable.[23] Since a complex adaptive system is in a state of continuous learning and change, predicting future behavior was impossible.[24]

Campaign design may be suffering under the aging, linear, "end-state driven" design model of the commander's estimate. Failings in the past eight to nine years may have been partly the result of poor guidance from strategic directives, but the inability of operational level commanders and staffs to clearly define the problem set as a system has also led to misleading objectives, confusing end-states, and other miscalculations. As the COE moves away from conflicts lending themselves to the operational clarity of the cold war, commanders and writers of doctrine are seeing systemic analysis of the contemporary operating environment as a way forward.[25] It is being incorporated into our design doctrine at the operational level through publications like JP 5-0 and JP 3-0. The problem then is thus: what kind of a design model envisions the COE as a system, does not rely on predictive analysis in complex systems, and serves the operational commander as a powerful campaign designing tool? How does an operational commander, when faced with an ill-structured problem, take his strategic guidance and, through operational art, arrange tactics to achieve strategic objectives in the COE?

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[23] Vego, *Effects Based Operations: A Critique*, 52.
[24] Davidson, *Maintaining the Cognitive Initiative*, 25.
[25] Richard Swain, "Commander's Business, Learning to Practice Operational Design," *Joint Force Quarterly*. Issue 53 (2nd Quarter 2009): 62.

SYSTEMIC OPERATIONAL DESIGN

SOD theory has its origins in the Israeli military and was developed by Brigadier General Shimon Naveh and a group of military thinkers in the 1990s. A broad definition of SOD is in its title; designing at the operational level by looking at a problem systemically. SOD focuses on relationships between the nodes in a system and develops the rationale for the behaviors in that system, facilitating a cycle of design, plan, act, and learn.[26] Uniqueness in the SOD model is the assumption that a system will change and that no strategy directive is final or complete.[27] This constant "reframing" of a problem lends itself more to defining what the problem is rather than actual problem solving. It is this aspect that makes SOD attractive to operational level planners. At its simplest, SOD allows design teams to systemically define problems and hand those products to planners, who solve them. This section will take a broad look at the actual process of SOD and its similarities and differences to the commander's estimate process.

The commander's estimate process is done by a full conventional military staff. SOD is done by a small, commander selected "design team" which consists of selected staff members and any external experts as needed.[28] SOD works through a process of seven sets of structured "discourse": System Framing, Rival as Rationale, Command as Rationale, Logistics as Rationale, Operation Framing, Operational Effects, and Forms of Function.[29] Discourse is a form of communication where the purpose is to "gain insight and to go beyond

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[26] Sorrels, *Systemic Operational Design: An Introduction,* 15.
[27] Ibid.
[28] Victor J. Delacruz, "Systemic Operational Design: Enhancing the Joint Operation Planning Process" (monograph, Fort Leavenworth, KS: United States Army Command and General Staff College, School of Advanced Military Studies Department, 2007), 30, http://www.dtic.mil/ (accessed 01 April 2009), Available as Defense Technical Information Center Report (DTIC) ADA470655.
[29] Sorrels, *Systemic Operational Design: An Introduction,* 22.

the understanding of any one individual."[30] Proper discourse, simply explained, involves uninhibited conversation and integration of ideas of all the members of the design team. While not an easy task due to the social conditioning of military planners, proper discourse is advantageous to the designer as it encourages the creativity of individuals on the team and allows the integration of ideas that can potentially be greater than the sum of its parts. This is not how normal military staffs function due to cultural and hierarchal reasons. The step by step, product oriented commander's estimate model limits the degree of high quality communications by forcing staffs to feed information into existing templates like a mission analysis brief, decision brief, or a commander's intent statement.[31]

The first structured discourse is the "System Framing", or the defining of a system and the structuring of its boundaries. Designers rationalize the context of the problem by searching for what change in the system brought about the need for the strategic directive to take action.[32] These systemic changes are called emergences. The design team identifies each emergence and also identifies the nodes and links in the system and defines relationships between each. The result of system framing is the simplification of the global system, or everything on Earth, and finding which subset has common inter-related elements whose relationships provide a backdrop to the problem. Key to framing the system is understanding the logic of the strategic sponsor, the policy makers or National Command Authority whose directives drive the process.[33] The analogue of System Framing in the Commander's Estimate process is called Mission Analysis. The functions are very similar but the lens is very different. Mission Analysis is a very structured and methodical attempt

[30] Delacruz, *Enhancing the Joint Operation Planning Process*, 28.
[31] Ibid.
[32] Sorrels, *Systemic Operational Design: An Introduction,* 23.
[33] Sorrels, *Systemic Operational Design: An Introduction,* 24.

to reduce the enemy to his different parts and capabilities, while system framing looks at how the enemy and his subsystems function together and how that can be affected.

System Framing has three sub-components: Rival as Rationale, Command as Rationale, and Logistics as Rationale. Rival as Rationale is a comparative study of the enemy system as it relates to the friendly system. The enemy is framed by exploring all the nodes and links that make up his structure: religion, culture, economy, military etc. It is important to note that the rival may actually be an emergence from conditions within the system instead of a previously existing entity like a government or a terrorist group.[34] The logic that identifies this is one of the most powerful aspects of SOD. This process is recorded in narrative and pictorial forms and the results become the basis for future planning against the rival.

Command as Rationale discourse, the second System Framing sub-component, serves to examine existing friendly command structures and potential command combinations for the end design.[35] It is an examination of the current command system, and through investigation of relationships it shows how friendly command must adapt to support operations. An example is the identification of the need for a new Joint Task Force or a Regional Commander assuming command outside his normal Area of Responsibility.[36] Logistics as Rationale is accomplished similarly to Command as Rationale. Friendly logistics systems are analyzed and a framework is designed that answers the strategic mobilization problems in the system.

The next structured discourse is Operation Framing. This process is the first time in the design model where designers will attempt to shape the system in their favor. Operation

[34] Delacruz, *Enhancing the Joint Operation Planning Process*, 34.
[35] Ibid., 35
[36] Sorrels, *Systemic Operational Design: An Introduction*, 25.

framing positions forces in space and time and provides ideas for how an operation may unfold.[37] Systemically speaking, the operation frame is a subset of the system frame, and its construction orders the system into action by changing relationships and creating tensions based on what the designers see as the ending conditions. Like the other discourses in SOD, this model is extremely responsive to changes in the system, and designers can continually monitor relationships as they emerge. Operation framing is functionally analogous to COA development in the Commander's Estimate process.

Operational Effects and Forms of Function are the final two discourses in SOD. Operational effects are learning focused and look at how inducing change in the system might push the system toward or away from the desired ending conditions. Learning is the key element in SOD and it dictates how, when, and why system reframing happens. Learning recognizes new events, possibilities, or logic which do meet established conditions and therefore mandates restructuring.[38] Quick and adaptive reframing is the most powerful aspect of the SOD planning model and prevents planners from being tied to expired problem frames.[39] Forms of Function discourse is the actual end state of SOD which is handed over to the planners. It dictates to the planner the form of action required.[40] Accompanying these recommendations is the logic the design team used to come to the conclusions and the graphics and narratives developed in the SOD process. In terms of the Commander's Estimate process, Operational Effects discourse serves the purpose of war gaming, and Forms of Function is recommendation of a course of action.

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[37] Ibid., 26
[38] Ibid., 27
[39] Huba Wass De Czege, "Systemic Operational Design: Learning and Adapting in Complex Missions," *Military Review*, January-February 2009, 5.
[40] Sorrels, *Systemic Operational Design: An Introduction*, 28.

The Systemic Operational Design approach intends to provide the commander the visualization of the variables of a problem that may have escaped estimate level analysis.

KEY DIFFERENCES AND ARGUMENTS

It is useful to identify the key differences between SOD, or any systemic design model, and what has been called the Commander's Estimate in this paper. The two processes are mutually exclusive and cannot be used logically alongside one another, but one model may be used more effectively than the other in certain situations. It is vital to understand the difference between "design" and "planning", as well. Design is defined in Field Manual (FM) 3-24 *Counterinsurgency* as "problem setting, conceptual, and commander driven", while planning is defined as "problem solving, physical and detailed, paradigm accepting, and staff centered".[41] The differences below are true only in a general sense, and specific situations may call for reinterpretation.

Systemic design is focused on recognizing tensions in an *open system* or one that is constantly being influenced by outside or unknown sources. It is focused on learning and dealing with new and ever changing patterns. SOD concentrates on changing relationships between nodes and forward planning, something that opponents of SOD find undesirable, as explained later. Most importantly, SOD is useful for the *conceptual designing of approaches to operations* rather than being focused on planning tactical action.

The Commander's Estimate Process generally treats problems linearly as if they are *closed systems.* It is focused on action rather than learning and operates off of existing templates. The Commander's Estimate focuses on attacking nodes rather than their

[41] U.S. Army, *Counterinsurgency*, Field Manual (FM) 3-24. (Washington D.C: Headquarters Department of the Army, 5 December 2006), 4-2.

relationships, and relies heavily on objective focused and end-state driven regressive planning. The primary usefulness of this process is towards *planning major operations and tactical battles*.

Literature exists that argues against Systemic Operational Design. While it is obvious to most scholars and warriors that systemic analysis is very useful in dealing with complex systems, an interesting and worthwhile argument counters that strategic end-state should always be the starting point of any planning process. Simply put, the complexity of the problem is moot, and "logic and common sense dictate that one should always start with what ultimately must be accomplished."[42] This applies in linear problem solving, but in an ill-structured problem there may be no definable end-state. The COE in Iraq can be thought of as one perpetual security campaign in pursuit of desirable change.[43] End-state in that environment, from the national strategic to the tactical level, has been extremely hard to define. If end-state must be the start point, how can planners begin to even frame the problem? The same logic applies for classical campaign design terms such as "center of gravity", defined in JP 3-0 as "the source of power that provides freedom of action, physical strength, and will to fight".[44] These terms are ideal for the "force on force" model of warfare but are extremely hard to define in a complex systemic environment.

Another argument against SOD is that the language it uses is non-sensical and devoid of meaning.[45] The creators of SOD were influenced heavily by post-modern philosophers. This leads to a highly descriptive literary style that is "essentially a collection of scientific,

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[42] Milan N. Vego, "A Case Against Systemic Operational Design," *Joint Force Quarterly*. Issue 53 (2nd Quarter 2009): 74.
[43] Wass de Czege, *Adapting in Complex Missions*, 4.
[44] Chairman, U.S. Joint Chiefs of Staff. *Joint Operations*, Joint Publication (JP) 3-0. (Washington DC: CJCS, 13 February 2008), IV-10.
[45] Vego, *A Case Against Systemic Operational Design*, 71.

pseudoscientific, and philosophical jargon."[46] While it is important to keep language simple in planning, ignoring a useful and powerful design model like SOD because the language is complex may not be a credible argument. Changing the language and keeping the same model makes more sense.

CONCLUSIONS

Operations in support of the Global War on Terror have shown that there is a need for drastic change in our defining the nature of problems and designing approaches. They have argued that added complexity in the COE means that professional military knowledge should remain in a purposeful state of instability.[47] Systemic Operational Design is a powerful tool for use by joint commanders who are responsible for designing major operations against enemies who typify the current operational environment. It provides a more comprehensive and adaptive look at an environment that is characterized by constant change, inter-service capability, non-state actors, cultural complexity, and global repercussions. However, it is a problem *setting*, not solving, model. It is useful to frame the initial strategic intent and to develop the operational idea. Therefore, the lowest level that SOD is permanently useful is the operational level Joint Task Force (JTF) headquarters, where military operational logic is created through design.[48] While commanders at lower levels may find it useful to man and maintain design teams for specific situations, SOD should not fully replace the current Commander's Estimate process at levels of war where planning is enemy focused and more linear, i.e. where commanders are physically, not

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[46] Ibid.
[47] Christopher R. Paparone and George Reed, "The Reflective Practitioner: How Military Professionals Think in Action," *Military Review,* March-April 2008, 66.
[48] Sorrels, *Systemic Operational Design: An Introduction,* 76.

cognitively, interacting with their enemies.[49] SOD teams at a JTF headquarters should be manned to be a permanent fixture capable of reframing systems as emergences are identified. This constant reframing ability means that the campaign plan will constantly be under revision and flexibility will become routine.

Finally, systems theory is not a fundamental building block in the current Professional Military Education (PME). If any design model based on the recognition of systems is to be implemented by planning staffs, its members should have some background in systems and chaos. As shown above, current doctrine such as Joint Publications 3-0 and 5-0 both make references to systemic framing but provide only rudimentary explanations for the terms and theory.

RECOMMENDATIONS

Based on the conclusions of this paper, Systemic Operational Design should be further researched as a possible design tool for operational commanders working in the COE. One idea is to put the model to the test using an operational staff in a simulated or real environment, such as a rotation to a Combined Training Center. Operational commanders can also test SOD in real time by designating a design cell whose sole responsibility is systemic analysis of the unit's ill-structured problem.

Systemic analysis needs to be put into the military's professional education system. The complexity of the COE is something that will not be going away. For the reasons listed in the introduction, commanders will be dealing with ill-structured problems for the foreseeable future. It is imperative that younger leaders be exposed to systems theory at their mid-level (O-3/O-4) schooling in order for them to be efficient designers on joint staffs.

[49] Ibid., 77

SOD language needs to be changed. We are a learned and professional military, but human nature shows that a new and complex system will meet resistance if it is unreasonably hard to comprehend. The system logic should stay the same, but terminology more akin to military doctrine should be put into place if this design model is to be injected into our professional education system. For example, there is no reason that "Rival as Rationale" cannot be called "Systemic Enemy Analysis", a term that can easily be reconciled with our current doctrine.

SOD requires further research before its adoption as doctrine implementation at any level. One area in particular is the specific process that staffs should use to execute SOD. By its nature, SOD is not a lockstep or rigid process, and this leaves much room for interpretation for each staff trying to use it.[50] Serious thought should be given to how this process can be taught and defined in doctrine while maintaining the flexibility that makes the model so powerful.

[50] Daniel H. Hibner, "A Cognitive Assessment of Military Approaches to Understanding" (monograph, Fort Leavenworth, KS: United States Army Command and General Staff College, School of Advanced Military Studies Department, 2008), 38, http://cgsc.cdmhost.com/ cgi-bin/showfile.exe?CISOROOT=/p4013coll3&CISOPTR=2309&filename=2310.pdf (Accessed 01 April 2009).

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